

# ALUMINUM HOUSED RESISTORS

## 600 SERIES

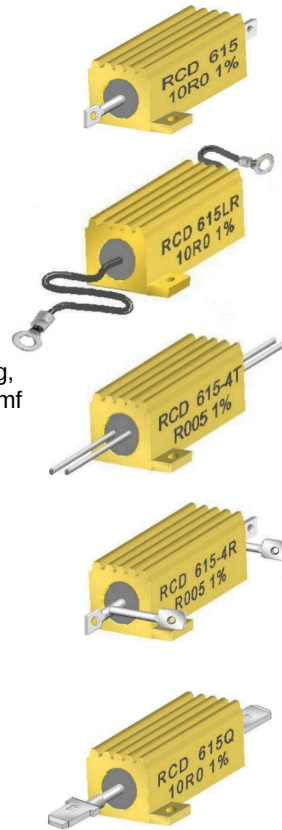
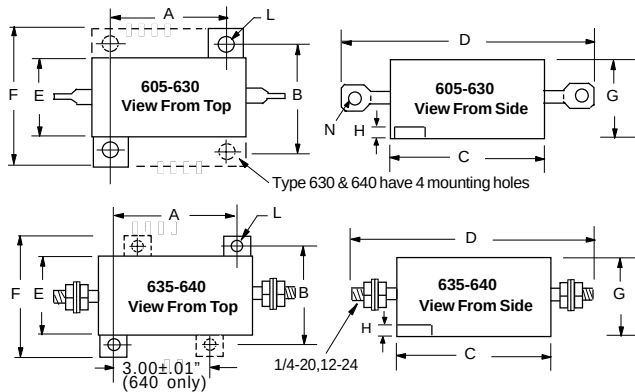


Term.W is  
RoHS  
compliant  
& 260°C  
compatible



RESISTORS • CAPACITORS • COILS • DELAY LINES

- Widest selection in the industry! 5 to 1000 Watt
- 0.005Ω to 1MΩ, tolerance to .01%, TC to 5ppm
- High power and high pulse capacity in compact size
- Welded wirewound construction, low noise
- Available on exclusive **SWIFT™** delivery program!
- Option X:** Non-inductive
- Option P:** Increased pulse capability
- Option ER:** 100 hour burn-in per MIL-PRF-39009
- Option B:** Increased power
- Additional modifications: unanodized cases, custom marking, increased dielectric/creepage & working voltage, low thermal emf (opt.E), etc. Customized components are an RCD Specialty!



Standard units feature lug terminals (605 - 630) or threaded terminals (635 & 640).

**Option L (605-625):** Insulated stranded wires embedded into the case. Black TFE 18awg x 12" L with 1/4" strip is standard (16awg TFE & 14awg PVC avail). Also available with 4 insulated lead wires (Opt.4L), and with a wide variety of terminals... quick-connect male (Opt. LM=.25x.032); female (Opt. LF=.25x.032", LFS=.187x.020); ring terminal (Opt. LR=.145" I.D., LRR=.25" I.D.).

**Option 2T & 4T (605-625):** Straight leadwires. 2T is 2-terminal design, 4T is 4-terminal. Each have 18awg x 1" min lead length. 16awg x 1" and 12AWG x .5" also available (12 AWG not avail in Opt 4T).

**Option 4R (605-630):** 4-terminal design. 16AWG lug terminals are welded to standard terminals.

**Option Q (605-630):** .187x.020" male fast-on terminal; Opt. Q2 (610-625) is .250x.032" male terminal. Opt. Q & Q2 add 0.9 ± 0.125" to Dim. D.

### SPECIFICATIONS: Consult factory for dimensions on liquid cooled design up to 1000 Watt

| RCD Type | MIL Type <sup>1</sup> | Wattage, Mounted |       |     | Resis. Range (Ω) | Voltage Rating <sup>2</sup> | A ±.005              | B ±.005             | C ±.062         | D ±.062              | E ±.031          | F ±.031          | G ±.031            | H ±.010            | L ±.005            | N ±.005           | Mtg Screw    |
|----------|-----------------------|------------------|-------|-----|------------------|-----------------------------|----------------------|---------------------|-----------------|----------------------|------------------|------------------|--------------------|--------------------|--------------------|-------------------|--------------|
|          |                       | Std              | Opt.B | MIL |                  |                             |                      |                     |                 |                      |                  |                  |                    |                    |                    |                   |              |
| 605      | RE/RE60               | 7.5              | 15    | 5   | .005-20K         | 160                         | .444<br>[11.3]       | .490<br>[12.5]      | .600<br>[15.2]  | 1.125<br>[28.6]      | .334<br>[8.5]    | .646<br>[16.4]   | .320<br>[8.2]      | .065<br>[1.6]      | .093<br>[2.4]      | .050<br>[1.3]     | #2<br>[M2]   |
| 610      | RE/RE65               | 12.5             | 20    | 10  | .005-100K        | 265                         | .562<br>[14.3]       | .625<br>[15.9]      | .750<br>[19.0]  | 1.375<br>[35.0]      | .420<br>[10.8]   | .800<br>[20.3]   | .405<br>[10.3]     | .075<br>[1.9]      | .093<br>[2.4]      | .086<br>[2.2]     | #2<br>[M2]   |
| 615      | RE/RE70               | 25               | 35    | 20  | .005-200K        | 550                         | .719<br>[18.3]       | .781<br>[19.8]      | 1.062<br>[27.0] | 1.938<br>[49.3]      | .531<br>[13.5]   | 1.080<br>[27.4]  | .546<br>[13.9]     | .088<br>[2.2]      | .125<br>[3.2]      | .086<br>[2.2]     | #4<br>[M2.5] |
| 620      | RE/RE75               | 50               | 60    | 30  | .005-400K        | 1250                        | 1.563<br>[39.7]      | .844<br>[21.5]      | 1.968<br>[50.0] | 2.781<br>[70.6]      | .609<br>[15.6]   | 1.140<br>[28.8]  | .610<br>[15.5]     | .088<br>[2.2]      | .125<br>[3.2]      | .086<br>[2.2]     | #4<br>[M2.5] |
| 625      | -                     | 75               | -     | -   | .01-500K         | 1900                        | 1.563<br>[39.7]      | .844<br>[21.5]      | 2.850<br>[72.4] | 3.663<br>[93.0]      | .609<br>[15.6]   | 1.140<br>[28.8]  | .610<br>[15.5]     | .088<br>[2.2]      | .125<br>[3.2]      | .086<br>[2.2]     | #4<br>[M2.5] |
| 630      | -                     | 100              | -     | -   | 0.1-100K         | 1900                        | 1.377±.01<br>[35.0]  | 1.457±.01<br>[37.0] | 2.579<br>[65.5] | 3.38±.09<br>[85.9]   | 1.053<br>[26.7]  | 1.839<br>[46.7]  | .960±.05<br>[24.4] | .138±.03<br>[3.5]  | .173±.01<br>[4.4]  | .086 Min<br>[2.2] | #8<br>[M4]   |
| 635      | RE77                  | 100              | 150   | 75  | 0.1-600K         | 1900                        | 2.75±.01<br>[69.85]  | 2.25±.01<br>[57.15] | 3.50<br>[88.9]  | 5.48±.09<br>[139.14] | 1.812<br>[46.0]  | 2.812<br>[71.42] | 1.75<br>[44.45]    | .188±.03<br>[4.78] | .188±.01<br>[4.78] | n/a               | #8<br>[M4]   |
| 640      | RE80                  | 250              | 300   | 120 | 0.1-1M           | 2300                        | 3.875±.01<br>[98.42] | 2.50±.01<br>[63.5]  | 4.50<br>[114.3] | 7.00±.09<br>[177.8]  | 2.125<br>[53.98] | 3.00<br>[76.2]   | 2.188<br>[55.58]   | .250±.03<br>[6.35] | .188±.01<br>[4.78] | n/a               | #8<br>[M4]   |

<sup>1</sup> Military part numbers are for reference only and do not imply qualification. <sup>2</sup> Max. voltage = (PR)<sup>1/2</sup>, not to exceed the value listed (increased ratings avail). Multiply by 0.7 for Opt.X.

### TYPICAL PERFORMANCE CHARACTERISTICS:

|                             |                                                                                                                                                                                                                                                                                |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Temp. Coefficient</b>    | .005 - .0099Ω: 600ppm std (200, 300ppm opt.)<br>.01 - .049Ω: 300ppm std (100, 200ppm opt.)<br>.05 - .099Ω: 200ppm std (50, 100ppm opt.)<br>.1 - .99Ω: 90ppm std (10, 20, 30, 50ppm opt.)<br>1 - 9.9Ω: 50ppm std (10, 20, 30ppm opt.)<br>10Ω & above: 20ppm std (5, 10ppm opt.) |
| <b>Dielectric (DWV)</b>     | <b>Standard<sup>3</sup></b><br>605, 610 1KV<br>615, 620, 625 2KV<br>630, 635, 640 2.5KV<br><b>Optional</b><br>2KV (Opt.36), 2.5KV (Opt.34)<br>2.5KV (Opt.34), 3KV (Opt.41)<br>3KV (Opt.41), 4KV (Opt.65)                                                                       |
| <b>Inductance, Opt.X</b>    | <b>&lt;50Ω</b><br>605 0.2uH Max<br>610, 615 0.3uH Max<br>620, 625 0.65uH Max<br>630, 635, 640 1.5uH Max<br><b>&gt;50Ω</b><br>0.37uH Max<br>0.6uH Max<br>1.2uH Max<br>3.0uH Max                                                                                                 |
| <b>Load Life (1000 hrs)</b> | ±1% (±2% for 625-640, and ±3% Opt.B)                                                                                                                                                                                                                                           |
| <b>Moisture Resistance</b>  | ±0.5%                                                                                                                                                                                                                                                                          |
| <b>Overload</b>             | 5x rated W, 5 Sec (V not to exceed DWV)                                                                                                                                                                                                                                        |
| <b>Terminal Strength</b>    | 10-lb pull test                                                                                                                                                                                                                                                                |
| <b>Operating Temp.</b>      | -55°C to +250°C                                                                                                                                                                                                                                                                |

<sup>3</sup> The dielectric strength on Opt. L resistors is 50% of standard (available up to 3KV)

**DERATING:** Power rating is based on the use of a suitable heat sink and thermal compound to limit case temp. to 200°C. Derate wattage 0.44%/°C above 25°C. Recommended aluminum chassis area is 64in² x.040" thick for type 605 and 610, 83in² x.040" thick for type 615, 144in² x.060" thick for type 620, and 144in² x .125" for types 625 through 640. Without a heat sink, derate wattage rating by 60%.

### P/N DESIGNATION:

**610 - 1001 - F B W**

**RCD Type** \_\_\_\_\_

**Options:** X, Q2, Q, P, LRR, LR, LM, LFS, LF, L, ER, E, B, 65, 41, 36, 34, 16, 14, 4T, 4R, 4L (leave blank if std)

**Resis. Code:** ≤1%: 3 signif. figures & multiplier, e.g. R010=0.01Ω, R100=0.1Ω, 1R00=1Ω, 1000=100Ω, 1001=1KΩ

**Resis. Code 2% - 10%:** 2 signif. figures & multiplier, e.g. R01=0.01Ω, R10=0.1Ω, 1R0=1Ω, 100=10Ω, 102=1KΩ

**Tolerance:** K=10%, J=5%, H=3%, G=2%, F=1%, D=0.5%, C=0.25%, B=0.1%, A=0.05%, Q=0.02%, T=0.01%

**Packaging:** B = standard

**Non-std lead length for option L (inches):** (12" = std) 4", 16", etc.

**Optional TC** (leave blank if std): 5=5ppm, 10=10ppm; 20=20ppm; 30=30ppm; 50=50ppm; 101=100ppm, 201=200ppm, 301=300ppm)

**Termination:** W= Lead-free, Q= Tin/Lead (leave blank if either is acceptable)